In the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1 1 (currently amended) A multiphase receiver for receiving a digital signal, comprising:
2 a plurality of decision circuits, each decision circuit comprising a comparator
3 circuit and having an input connected to a communications channel over which a digital signal is
4 communicated, operating at a frequency that is a fraction of the bit rate of the digital signal and
5 generating an output signal corresponding to the state of said digital signal; and
6 feedback circuitry for receiving the output signal of two or more of the decision
7 circuits and applying a feedback signal to the input of the decision circuits as a function of the
8 output signals from the two or more of the decision circuits, wherein the function is the average
9 of the output signals of the two or more decision circuits.

1 2. (original) The multiphase receiver of claim 1, wherein:
2 the function is a sum of the output signals of the two or more decision circuits.

1 3. (original) The multiphase receiver of claim 1, wherein the feedback circuitry
2 comprises:
3 an adder for receiving the output signal of the two or more of the decision circuits
4 and generating a summation output; and
5 a conditioning circuit for generating the feedback signal based upon the
6 summation output of the adder, the feedback signal being suitable for modifying digital signals
7 transported over the communications channel and appearing at the input of the decision circuits.

1 4. (original) The multiphase receiver of claim 1, wherein the feedback circuitry receives
2 the output signal from each of the decision circuits.

1 5. (original) The multiphase receiver of claim 1, wherein the feedback circuitry
2 comprises:
3 a plurality of current steering switches, each current steering switch being driven

by an output signal of a distinct decision circuit so as to pass a current therethrough based upon the value of the output signal of the corresponding decision circuit, each current steering switch being coupled to at least one summing node for combining the current thereof, the feedback signal being based upon an electrical characteristic of the summing node.

6. (original) The multiphase receiver of claim 5, wherein the feedback circuitry further comprises:

a charge collection component coupled to the at least one summing node so as to collect charges corresponding to the current passed by the current steering switches.

7. (original) The multiphase receiver of claim 5, wherein:

a direction of current passed by each current steering switch is based upon the value of the output signal of the decision circuit associated with the current steering switch.

8. (previously presented) The multiphase receiver of claim 1, wherein the feedback circuitry comprises:

a plurality of current steering switches, each current steering switch being driven by an output signal of a distinct decision circuit so as to pass a current therethrough based upon the value of the output signal of the corresponding decision circuit, each current steering switch being combined at the input of the decisions circuits to form the feedback signal.

9. (original) The multiphase receiver of claim 8, wherein:

a direction of current passed by each current steering switch is based upon the value of the output signal of the decision circuit associated with the current steering switch.

10. (original) The multiphase receiver of claim 1, wherein the feedback circuitry comprises:

a plurality of current steering switches, each current steering switch being driven by an output signal of a distinct decision circuit so as to pass a current therethrough based upon the value of the output signal of the corresponding decision circuit, each current steering switch being coupled to a differential pair of summation nodes, the summation node of the differential

pair of summation nodes to which a current is steered by a current steering switch is based upon the value of the output signal of the decision circuit associated with the current steering switch, the feedback signal being based upon an electrical characteristic of the differential pair of summation nodes.

11. (canceled)

12. (previously presented) A method for receiving digital signals, comprising:

providing a plurality of comparator circuits each responsive to a different clock signal;

sampling a digital signal appearing at an end point of a communications channel with the comparator circuits to generate a plurality of sampled signals; and

applying a feedback signal to the end point of the communications channel, the feedback signal being based upon the sampled signals.

13. (original) The method of claim 12, further comprising:

averaging the sampled signals and generating the feedback signal based upon the average of the sampled signals.

14. (original) The method of claim 13, wherein the steps of averaging and generating comprise steering a plurality of currents relative to the end point of the communications channel, each current being based upon a distinct sampled signal.

15. (original) The method of claim 14, wherein:

the steering comprises steering a plurality of first currents relative to at least one summing node, each first current being based upon a distinct sampled signal; and

the averaging and applying further comprise converting the signal appearing at the at least one summing node into a converted signal, and applying the converted signal to the end point of the communications channel.

16. (original) The method of claim 15, wherein the direction of each first current is

based upon a polarity of the sampled signal associated therewith.

17. (original) The method of claim 15, wherein the averaging and applying further comprise:

steering a plurality of second currents to the end point of the communications channel, each second current being based upon a distinct sampled signal.

18. (original) The method of claim 12, wherein the feedback signal is a differential signal.

19. (original) The method of claim 12, further comprising:

summing the sampled signals and generating the feedback signal based upon the sum of the sampled signals.

20. (previously presented) A receiver for receiving digital signals, comprising:

an input for receiving a digital signal having content;

a signal combiner for combining the digital signal with a feedback signal to provide an adjusted signal;

a plurality of decision circuits each comprising a comparator circuit, the comparator circuits each responsive to a different clock signal, the decision circuits providing decision signals corresponding to a state of said content, each of said decision circuits having an input for receiving the adjusted signal and providing a respective one of the decision signals; and

feedback circuitry for providing the feedback signal as a function of the decision signals.

21. (original) The receiver of claim 20, wherein the function is a sum of the decision signals.

22. (original) The receiver of claim 20, wherein the function is an average of the decision signals.

23. (original) The receiver of claim 20, wherein the feedback circuitry comprises:

an adder circuit for generating a summation signal based upon the decision signals; and

a conditioning circuit for conditioning the summation signal, the feedback signal being the conditioned summation signal.

24. (original) The receiver of claim 23, wherein:

the conditioning circuit converts the summation signal to a current.

25. (previously presented) The receiver of claim 23, wherein:

the conditioning circuit scales the summation signal.

26. (original) The receiver of claim 20, wherein the feedback circuitry comprises:

a plurality of pairs of switches, each pair of switches being controlled by a distinct decision signal and including a first switch providing a current to the signal combiner and a second switch providing a current to at least one summation node; and

a circuit for applying to the signal combiner a signal representative of the signal appearing on the at least one summation nodes.

27. (original) The receiver of claim 26, wherein:

a polarity of the current provided by each first switch is based upon the polarity of the decision signal controlling the first switch; and

a polarity of the current provided by each second switch is based upon the polarity of the decision signal controlling the second switch.

28. (original) The receiver of claim 26, wherein:

the at least one summation node comprises a pair of summation nodes, a voltage appearing across the pair of summation nodes comprising a differential signal; and

each second switch provides a current to any of the summation nodes based upon the polarity of the decision signal controlling the second switch.

29. (currently amended) A receiver for receiving digital signals, comprising:

comparator means, in a non-feedback path of said receiver, for sampling a digital signal appearing at an end point of a communications channel so as to generate a plurality of sampled signals;

means for generating a feedback signal based upon the sampled signals, the means for generating comprising means for averaging the sampled signals and for generating the feedback signal based upon an average of the sampled signals; and

means for applying the feedback signal to the end point of the communications channel.

30. (canceled)

31. (currently amended) The receiver of claim 29 ~~30~~, wherein the means for averaging the sampled signals comprises:

means for steering a plurality of first currents relative to the end point of the communications channel, each current being based upon a distinct sampled signal.

32. (original) The receiver of claim 31, wherein the means for averaging further comprises:

means for steering a plurality of second currents relative to at least one summing node, each second current being based upon a distinct sampled signal; and

means for converting the signal appearing at the at least one summing node into a converted signal, the converted signal forming the feedback signal.

33. (original) The receiver of claim 32, wherein:

the direction of each second current is based upon a polarity of the sampled signal associated therewith; and

the direction of each first current is based upon a polarity of the sampled signal associated therewith

34. (original) The receiver of claim 29, wherein:

the digital signal is a differential signal.

35. (currently amended) A multiphase receiver for receiving a digital signal, comprising:

a plurality of decision circuits, each decision circuit having an input connected to a communications channel over which a digital signal is communicated, operating at a frequency that is a fraction of the bit rate of the digital signal and generating an output signal corresponding to the digital signal; and

feedback circuitry for receiving the output signal of two or more of the decision circuits and applying a feedback signal to the input of the decision circuits as a function of the output signals from the two or more of the decision circuits, the feedback circuitry comprises a plurality of current steering switches, each current steering switch being driven by an output signal of a distinct decision circuit so as to pass a current therethrough based upon the value of the output signal of the corresponding decision circuit, each current steering switch being coupled to at least one summing node for combining the current thereof, the feedback signal being based upon an averaged electrical characteristic of the summing node.

36. (currently amended) A multiphase receiver for receiving a digital signal, comprising:

a plurality of decision circuits, each decision circuit having an input connected to a communications channel over which a digital signal is communicated, operating at a frequency that is a fraction of the bit rate of the digital signal and generating an output signal corresponding to the digital signal; and

feedback circuitry for receiving the output signal of two or more of the decision circuits and applying ~~a feedback~~ an averaged feedback signal to the input of the decision circuits as a function of the output signals from the two or more of the decision circuits, the feedback circuitry comprises a plurality of current steering switches, each current steering switch being driven by an output signal of a distinct decision circuit so as to pass a current therethrough based upon the value of the output signal of the corresponding decision circuit, each current steering switch being combined at the input of the decisions circuits to form the averaged feedback signal.

37. (currently amended) A multiphase receiver for receiving a digital signal, comprising:

a plurality of decision circuits, each decision circuit having an input connected to a communications channel over which a digital signal is communicated, operating at a frequency that is a fraction of the bit rate of the digital signal and generating an output signal corresponding to the digital signal; and

feedback circuitry for receiving the output signal of two or more of the decision circuits and applying ~~a feedback~~ an averaged feedback signal to the input of the decision circuits as a function of the output signals from the two or more of the decision circuits, the feedback circuitry comprises a plurality of current steering switches, each current steering switch being driven by an output signal of a distinct decision circuit so as to pass a current therethrough based upon the value of the output signal of the corresponding decision circuit, each current steering switch being coupled to a differential pair of summation nodes, the summation node of the differential pair of summation nodes to which a current is steered by a current steering switch is based upon the value of the output signal of the decision circuit associated with the current steering switch, the averaged feedback signal being based upon an electrical characteristic of the differential pair of summation nodes.